

## REMARKS

The applicant respectfully requests the Examiner to consider the application in view of the preceding amendments and the following remarks related to the amended and newly added claims proposed above and the Office Action dated on March 3<sup>rd</sup>, 2003. The amendments presented above contain no new matter and raise no new issues.

The numbering below refers to that of the Office Action.

1. The Examiner points out that the layout of the original specification is not according to existing guidelines. The applicant has corrected this omission by enclosing a substitute specification enclosed herein. The substitute specification contains no new matter it is merely organized according to the preferred layout.

As advised by the Examiner "Brief Description of the Drawings" of the substitute specification is now brief and does not include element numbers. Similarly according to the advice by the Examiner the applicant has organized the substitute specification so that "Detailed Description of the Invention" now clearly describes the invention and includes the element numbers.

2. The drawings are objected to under 37 CFR 1.83(a). The Examiner states that the drawings must show every feature of the invention specified in the claims and therefore the claimed elements must be shown or the features canceled from the claims. The applicant cancels Figure 5, which included elements that were not recited in the claims.

The Examiner states that the configuration on the chair frame in Fig. 2 is not described in the specification or in the claims. The chair frame illustrated in Fig. 2 is one embodiment of the invention and is described also in the original specification. The main feature of this embodiment is that the chair is not collapsible due to the tow bar attachment, which is permanently fixed to the lower side frame members. This embodiment is described on

page 5 of the original application: "1. The front ends of the lower side members may be coupled together with a combination of frame members and linear bearings, to maintain alignment of the lower side frame members." The applicant has now included the appropriate numbering of the elements to the drawing and has added clarifying text into the specification, without adding any new matter.

The applicant has deleted the "#" symbols from the figures as requested by the Examiner. Moreover the applicant has labeled the drawings properly as also requested by the Examiner. No new matter is amended into the drawings.

3. Claim 1 to 7 are rejected under 35 U.S.C. 112, first paragraph as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor at the time the application was filed, had possession of the claimed invention. The Examiner states that the specification fails to clearly describe the invention because of omissions in Description of the Invention and the drawings. The applicant believes that the newly organized substitute specification containing element numbers and the amended drawings as attached here clearly describe the invention and the amended claims are allowable in light of the description and the drawings.

4. Claims 1 to 7 are rejected under 35 U.S. C 112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that the claims fail to clearly describe the invention because:

- a. many elements cannot be identified in the drawings.

To make the application more clear the applicant has now used the same language in the newly amended claims and in the description. Moreover, the elements are now marked into the amended drawings. Therefore the applicant believes that the newly amended claims do clearly describe the invention in light of the substitute specification and amended drawings. The applicant respectfully traverses this rejection.

b. The following elements are unclear/undefined

- i. claim 1. means for changing the spacing between side frame members.  
In the newly amended claim 1 this part is deleted.
- ii. Claim 1 "means to raise/lower the seat". In the newly amended claim 1 this part is deleted.
- iii. Claim 2 "transverse frame members". The applicant has canceled claim 2.
- iv. Claim 4 "upper side members are arms" "sling means". The applicant has amended claim 4 in a way that this unclearness should be corrected. Sling means has been deleted from the amended claim 4.
- v. Claim 5 "cantilevered seat", "torsion bar suspension". The applicant has canceled claim 5.

c) The examiner states that several elements in the claims 1,2 ,5, 6 and 7 lack antecedent basis. The applicant has canceled the claims 2 and 5 and amended claims 1, 6, and 7 in a way that there is no more lack of antecedent basis.

5. The claims 1 to 5 are rejected under 35 USC 102(b) as being anticipated by Radjenovic et al.

The Examiner states that Re. Claims 1, 3, and 4 Radjenovic discloses a lightweight wheelchair assembly comprising two lower side members, two rear members pivotally connected to form an X with lower side members, including means for pivoting to a horizontal and parallel position when the chair is collapsed, two upper side members coupled to upper ends of the rear members, wheels mounted on the front and back, respectively, of the lower side members, seat supported on the upper side members, means for changing the spacing between side members, means for raising and lowering the seat, means for entirely collapsing the chair.

The applicant has deleted the language in claim 1 containing "X-configuration", "pivotal connection", "means to change spacing between upper side frame members" and "means for permitting rear frame members to pivot to horizontal and parallel position when the chair is collapsed". The applicant has canceled claim 3 claiming a seat supported on an upper side member. In the newly amended claims 8 to 14 this language is not used. Therefore the applicant believes that Radjenovic does not anticipate the newly amended claims.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Radjenovic in view of Hull. The Examiner states that Radjenovic does not disclose a coupling means on the front of the lower side members for towing, while Hull shows this feature including quick-release means. The Examiner goes further stating that although Hull does not specify that the towing vehicle be motorized, it is clear that Hull's invention can be applied to this type of vehicle. Therefore according to the Examiner it would have been obvious to one with ordinary skill in the art at the time of the invention was made to include a towing means as shown by Hull so that the wheel chair may be safely transported by other vehicle. The applicant respectfully traverses this rejection based on the following.

Hull discloses a bicycle tow-bar to be attached between a bicycle and a wheelchair. The tow-bar is to be attached to the swivel wheels of the wheelchair. As a result the tow-bar lifts the front swivel wheels of the wheelchair off the ground and the chair acts as a two-wheel trailer (Col. I, 41-46). If one skilled in the art would come into an idea of combining a wheelchair similar to that disclosed by Radjenovic to the towing method of Hull -even if a motorized vehicle was used- the result would not be the present invention of the applicant. By combining disclosures of Hull and Radjenoviz and using a motorized towing vehicle would lead to a wheel chair towed by having the front wheels off the ground and the person using the wheel chair leaning backwardly. Sitting like that is fully different from the basic idea of the present invention where the user of the wheel chair sits normally in the chair.

Moreover, the tow bar of Hull is attached to the swivel wheels, while the tow bar of the present invention is attached with one pin-coupling assembly to a tow bar attachment which may or may not be fixed to the lower side frame members of the chair. Therefore, the mounting system of the present invention is fully different from that described by Hull and one skilled in the art would not have ended to the present invention by using the attachment system of Hull in the invention of Radjenoviz.

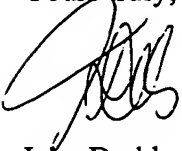
Furthermore, one key idea of the present invention is that the person towing the wheel chair can be a senior citizen or otherwise may have limited ability to move. If one skilled in the art would look for applications for enabling such a person to tow someone sitting in a wheel chair, she/he would not turn to Hull, because the invention of Hull requires the one using the towing vehicle to be one able to use a bicycle. Therefore the disclosure of Hull is not relevant art for one skilled in the art.

7. The Examiner states that the prior art made of record and not relied upon is pertinent to the applicant's disclosure. The applicant has reviewed the prior art pointed out by the Examiner and believes that the invention as described and claimed is patentable over the prior art.

## CONCLUSION

Each of the Examiner's rejections has been hereby addressed. Accordingly, favorable reconsideration and examination of the claims is respectfully requested along with allowance of the new claims. As the attorney of the applicant I request the Examiner to consider the application as amended herein.

Yours truly;

A handwritten signature in black ink, appearing to read 'John Dodds', written over the typed name.

John Dodds

Attorney of the Applicant

Reg No. 45533



SUBSTITUTE SPECIFICATION

Patent Application of

Marvin Byrd

For

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FEB 04 2004

**GROUP 3600**

5

6

7 **TITLE: COMPANION RIDER WHEEL CHAIR**

8

9 **BACKGROUND & CROSS REFERENCES TO RELATED APPLICATIONS**

10 This application is entitled to benefit of Provisional Patent Application Serial  
11 Number 60/263,496 filed on January 23, 2001.

12

13 ~~BACKGROUND: FEDERALLY SPONSORED RESEARCH~~

14 The invention that is the subject matter of the present application was not a  
15 recipient of any federal support for its research and development.

16

17 **REFERENCE TO MICROFICHE APPLICATION**

18 Not applicable

19

20 **BACKGROUND OF THE INVENTION: ~~FIELD OF INVENTION~~**

21 This invention relates to the field of wheel chair devices that are used by the  
22 physically challenged for movement and convenience.

23

1       ~~Most prior wheelchairs are custom made to fit a particular individual with height~~  
2       ~~and width dimensioned to suit the physical configuration of the expected user of the~~  
3       ~~wheelchair. It is also noted that the wheelchairs that have been previously proposed have~~  
4       ~~been relatively heavy and bulky, and do not lend themselves to collapsing to an easy~~  
5       ~~storage configuration. While motorized wheel chair devices do exist, no previous art~~  
6       ~~describes the use of a coupling devise to allow a standard wheelchair to be coupled to a~~  
7       ~~motorized devise.~~

## 8

### 9       ~~BACKGROUND: DISCUSSION OF PRIOR ART~~

10       Most wheelchairs that are found in the market are custom made to fit a particular  
11       person, with specific height and width dimensioned to suit the physical configuration of  
12       the future user of the wheelchair. Furthermore, wheelchairs found in the prior art are  
13       relatively bulky and heavy and are not easy to store because of their complicated  
14       configuration, such as the cooperative escalator and wheel chair of Patent No. 4,326,622  
15       (Ellzey, 1982). With respect to wheelchairs with seats are divided, Patent No. 5,405,187  
16       (Söderlund, 1995) describes a wheelchair where the seat is divided longitudinally. With  
17       respect to motorized wheelchair devices, they are present in the prior art, such as the  
18       motorized invalid chair transport vehicle claimed in Patent No. D320,579 (Manning et al,  
19       1991), and in the universal electric wheeled chair described in Patent No. 4,941,540  
20       (Bernstein, 1990). Nevertheless, no prior art neither of lighter wheelchairs -such as the  
21       universal wheeled chair claimed in Patent 4,825,971 (Bernstein, 1989)- or of motorized  
22       wheelchair describe the use of a coupling devise to allow a standard wheelchair to be  
23       coupled to a motorized devise.



1 With respect to devices to hold the two members together when used as  
2 companion rider wheelchair, there are locks in the prior art such as the self locking, rattle  
3 resistant fork bolt described in Patent No. 6,022,166 (Rogers et al, 2000), but do not  
4 claim nor disclose the system used in the present invention.

5  
6 **BRIEF SUMMARY OF THE INVENTION**

7 This invention constitutes a lightweight wheeled chair forming a companion rider  
8 device ~~is~~ formed of hollow tubular frame members. The seat is preferably cantilevered  
9 from rear frame members. The frame includes two lower side frame members, each of  
10 which has ~~relatively small~~ wheels mounted at both ends. In one embodiment ~~the~~ the front of  
11 the two lower side members are coupled together using two coupling frame members  
12 inter-coupling the upper side and lower side ~~two~~ frame members to permit adjustment  
13 and collapsing of the wheeled chair. Two upper side members extend forwardly from the  
14 rear of the wheeled chair, and are secured to the rear frame members. A seat may be  
15 supported directly on these two upper side frame members, or the two upper side frame  
16 members may serve as arms for the wheeled chair, with the seat being slung from these  
17 arms at a lower position. The present invention is to provide a lightweight wheelchair that  
18 can be used as a standalone wheelchair, as well as for a recreational use coupled to a  
19 motorized vehicle.

20 **OBJECTS & ADVANTAGES**

21 Advantages of the new wheelchair include the fact that it is very lightweight, with  
22 the estimate of its weight being approximately 18 pounds. An additional advantage, of  
23 course, is the fact that it may be readily adjusted in height, from kitchen counter-top level

1 to a much lower desk height level. The unit can be constructed to be foldable so that it  
2 may easily fit into the back seat or trunk of a car.

3

4 ~~Other objects, features and advantages will become apparent from a consideration~~  
5 ~~of the following detailed description and from the accompanying drawings and the claims~~  
6 ~~of the invention.~~

7 In view of the foregoing, various objects of the present invention include the following:

8

9 1. One object of the present invention is to provide a lightweight wheelchair that can be  
10 used as a standalone wheelchair, as well as for a recreational use coupled to a motorized  
11 vehicle, such as a motorized wheel chair.

12 2. Another object of the present invention is to provide a wheelchair in which the width  
13 of the wheelchair between the side arms may be readily varied, and wherein the height of  
14 the seat of the wheelchair may be easily changed.

15

#### 16 BRIEF DESCRIPTION OF THE DRAWINGS

17

18 The invention will be more clearly understood after reference to the following detailed  
19 description of the preferred embodiment read in conjunction with the drawings, wherein:

20

21 Fig. 1. is a photograph side elevation view of a wheelchair illustrating an early  
22 embodiment of the present invention.

23

1 Fig. 2 A Illustrates a perspective view of the adjustable wheel chair with the towing bar  
2 device attached to it.

3  
4 Fig. 2 B Illustrates a perspective view of the adjustable wheel chair with the castor wheel  
5 assemblies attached to it.

6  
7 Fig. 3 is a sectional view of the adjustable companion rider wheel chair frame and the  
8 attachable towing device.

9  
10 Fig. 3A illustrates the adjustable chair frame and the towing bar attachment.

11  
12 Fig. 3B illustrates the coupling mechanism.

13  
14 Fig. 3C illustrates the towing bar.

15  
16 Fig. 3D illustrates the castors.

17  
18 Fig. 4. illustrates an alternative embodiment of the wheelchair frame.

19  
20 Fig. 5. is a photograph of the invention reduced to practice.

21  
22 **DETAILED DESCRIPTION OF THE INVENTION**

23

1 In accordance with one aspect of the present invention, a lightweight companion  
2 rider wheel chair, a frame having two lower side frame members 30, with wheels  
3 mounted at front end 31 and at rear end 32 ~~both ends thereof~~, and two rear frame members  
4 33 ~~pivotaly connected together intermediate there ends to form an "X" configuration,~~  
5 with the lower ends of each of the rear frame members 34 being pivotally secured to the  
6 rear ends of the lower side frame members 32. In addition, two forwardly extending  
7 upper side members 35 are provided, with these upper side frame members being  
8 mechanically secured to the upper ends 36 of the two rear frame members. With regard to  
9 the arms and seat of the wheeled chair, they may be arranged in one of two alternative  
10 ways. As one alternative, the forwardly extending upper side members 35 may be the  
11 wheelchair arms, and the seat may be supported by a sling from these arms. As another  
12 alternative, two sets of forwardly extending upper frame members 37 may be provided,  
13 with the upper pair constituting the arms of the wheeled chair, and the lower pair of  
14 forwardly extending frame members constituting the support for the seat. (See Figure 2 A  
15 and B). ~~One As an important feature of the invention is that arrangements may are be~~  
16 provided for changing the spacing of the side members, thereby causing the "X"  
17 configuration 38 ~~rear frame members~~ to pivot about their central pivot point and have the  
18 arms of the wheelchair come closer or farther apart, and correspondingly raise and lower  
19 the height of the seat. (See Figure 4) ~~Further, when the side members are spread apart to~~  
20 ~~their fullest separation, the rear frame members are very nearly parallel and horizontal.~~  
21 ~~for ease in storage.~~

22

1 The height of the chair can be adjusted by adjusting the attachment of the castor wheels  
2 40 and the rear wheels 42. The castors 39 are attachable to the front end of the lower side  
3 frame 31 with a coupling mechanism 4, 5. The castor wheels 40 can be attached in any of  
4 the several holes 8 provided in the castor wheel attachment 41. The rear wheels 42 can be  
5 attached into any of the several holes 6 provided in the lower end of the rear frames 34.

6  
7 The rear wheels can furthermore be adjusted depending of the weight of the person sitting  
8 in the chair by attaching the back wheels 42, into any of the several holes 7 provided in  
9 the rear end of the lower side frames 32.

10  
11 In order to use the wheel chair as a companion rider, the castor assemblies 39 are  
12 removed and instead a tow bar attachment 1 is attached in the front ends of the lower side  
13 frames 31. Alternatively, the tow bar attachment is permanently fixed to the front ends of  
14 the lower side frames (see Fig. 4). The rear end 45 of a tow bar 2 is attached to the tow  
15 bar attachment 1 with a pin-coupling coupler 46. The tow bar 2 is curved downwardly  
16 and the lowest part of the bar forms a rest for the feet 43. The front end of the tow bar 44  
17 is coupled to a coupling mechanism 3 in the motorized vehicle with another pin-coupling  
18 coupler 47.

19  
20 Other features of the invention may involve one or more of the following:

21  
22 1. The front ends of the lower side members may be coupled together with a combination  
23 of frame members and linear bearings, to maintain alignment of the lower side frame

1 members.

2 ~~2. In accordance with another aspect of the invention, the rear frame members are the~~  
3 ~~only structural members inter-coupling the seat and the arms with the lower side frame~~  
4 ~~members, so that the seat is cantilevered from the rear to provide a resilient torsion bar-~~  
5 ~~type suspension for comfortable support of the user of the wheeled chair.~~

6

7 ~~3. A T-bar device allows the folding model to be armed and disarmed in a quick and~~  
8 ~~simple manner as part of the folding component of the collapsible model.~~

9 ~~4.~~ 2. Advantages of the new wheelchair include the fact that it is very lightweight, with  
10 the estimate of its weight being approximately 18 pounds.

11 ~~5.~~ 3. An additional advantage, of course, is the fact that it may be readily adjusted in  
12 height, from kitchen counter-top level to a much lower desk height level. The unit may be  
13 collapsiblees so that it may easily fit into the back seat or trunk of a car.

14 ~~Other objects, features and advantages will become apparent from a consideration of the~~  
15 ~~following detailed description and from the accompanying drawings~~

16

## 17 ~~DESCRIPTION OF DRAWINGS~~

18 ~~Having thus described the invention in general terms, reference will now be to the~~  
19 ~~accompanying drawings in which:~~

20

21 ~~FIG. 1 is a photograph side elevation view of a wheelchair illustrating an early~~  
22 ~~embodiment of the present invention:~~

23

1 FIG. 2 is a diagrammatic presentation of wheelchair in Figure 1

2

3 FIG. 3 is a composite diagram of the coupling mechanism forming part of the wheelchair;

4 #1 Tow Bar attachment for tow bar coupling; #2 Tow bar; #3 Coupling mechanism to

5 couple tow bar to motorized vehicle; #4 Coupling for right castor; #5 coupling for left

6 castor;

7

8 FIG. 4 is a composite diagram of the height weight adjustment mechanism; #6

9 wheelchair height adjusters (left and right sides) #8 Castor height adjusters (left and right

10 sides)

11

12 FIG. 5 is a diagram of seat folding mechanism and armrest couplings; #9 a fragment

13 drawing of the back of the armrest (left and right sides) #10 a fragment drawing of front

14 armrest (left and right sides) #11 drawing coupling for rear armrest (right and left sides)

15 #12 drawing of combination of seat rest, and armrest couplings (left and right sides) #13

16 Rear seat rest couplings (right and left sides) #14 top of T Bar / X Bar for seat (left and

17 right sides) #15 Upper wheelchair frame connection; #16 U clamp to clamp the T Bar

18 X Bar to the upper side frame of wheelchair; #17 arm to connect X Frame to upper

19 chair frame; #18 U clamp to connect the lower wheelchair frame to the bottom of the T

20 Bar/W Bar; #19 Bottom of T Bar connection; #20 Lower wheelchair frame, connects to

21 the bottom of the T Bar; #21 Seat sling / X Frame, in open position.

22

23 FIG. 6 is a photograph of the invention reduced to practice.

1

2

3 ~~OPERATION OF INVENTION~~

4       The invention is operated by coupling the wheelchair device to a motorized  
5 vehicle such as an electric wheelchair or golf cart by means of the pin-coupling device.

6       The rider then can be pulled along for recreational purposes by the motorized vehicle.

7

8 ~~DESCRIPTION AND OPERATION OF ALTERNATIVE EMBODIMENTS~~

9       The invention can be used as a standalone wheelchair, or as a coupled device to a  
10 motorized device. The wheelchair invention described here is also available as a  
11 collapsible device so it can be stored and carried easily and conveniently, such as in the  
12 trunk of a car. The alternative embodiments described here are examples only; the scope  
13 of the invention shall be as described within the claims of the invention.

14

15 ~~CONCLUSION, RAMIFICATION & SCOPE OF INVENTION~~

16       This device offers a unique device for transport and recreation of those persons  
17 requiring the use of a wheelchair for movement. It improves the quality of life of the  
18 physically challenged and allows for more mobility in the community at large. The scope  
19 of the invention described here is for example only. The scope of the invention shall be  
20 determined as described within the claims of the invention.

21

22 ~~LIST OF REFERENCE NUMERALS~~

23       — Not applicable.



1 **SEQUENCE LISTING**

2

3 Not applicable

1    **ABSTRACT**

2            This invention constitutes a lightweight wheeled chair forming a companion rider  
3    device is formed of hollow tubular frame members. A tow bar can be attached to the tow  
4    bar attachment with a pin coupling assembly. The tow bar attachment is mountable to the  
5    front ends of the lower side frame of the chair or it may also be permanently fixed there.  
6    The tow bar is downwardly curved from its middle and it has a feet rest. The height of  
7    the wheelchair may be adjusted by mounting the back wheels and the castor wheels in  
8    different adjusting holes provided in the chair frames and in castor wheel attachment.  
9    ~~The seat is preferably cantilevered from rear frame members. The frame includes two~~  
10   ~~lower-side-frame members, each of which has bug-wheels on the back. The front of the~~  
11   ~~two lower side members are coupled together using two frame members inter-coupling~~  
12   ~~the two frame members to permit adjustment and collapsing of the wheeled chair. Two~~  
13   ~~upper-side-members extend forwardly from the rear of the wheeled chair and are secured~~  
14   ~~to the rear frame members. A seat may be supported directly on these two upper side~~  
15   ~~frame members, or the two upper side frame members may serve as arms for the wheeled~~  
16   ~~chair, with the seat being slung from these arms at a lower position. The present~~  
17   invention is to provide a lightweight wheelchair that can be used as a standalone  
18   wheelchair, as well as for a recreational use coupled to a motorized vehicle, such as an  
19   electric wheelchair.

20

1 ~~PETITION TO MAKE SPECIAL.~~

2 ~~This petition should be given special status because of the search of prior art and~~

3 ~~the value that this invention provides in terms of health and safety.~~